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(54) Abstract Title

## Treatment of wine with argon

(57) A method of treating wine comprises sparging the wine with an argon rich gas. The argon rich gas is preferably 100% argon, but may further comprise other noble gases, carbon dioxide or nitrogen. The wine is preferably treated in a bulk container 50 by bubbling the argon rich gas through the wine from a sparger 54, as the wine is being fed into the bulk container 50. From the bulk container 50, the wine is preferably dispensed, via pipe 64 and valve 62, into a plurality of gas impermeable containers 24, which are preferably bag-in-box type containers. The wine may have further argon rich gas bubbled through it on exiting the bulk container, via sparger 66. The gas impermeable containers 24 may be flushed with an argon rich gas prior to filling and/or further argon rich gas may be used to displace air from the headspace above the surface of the wine.

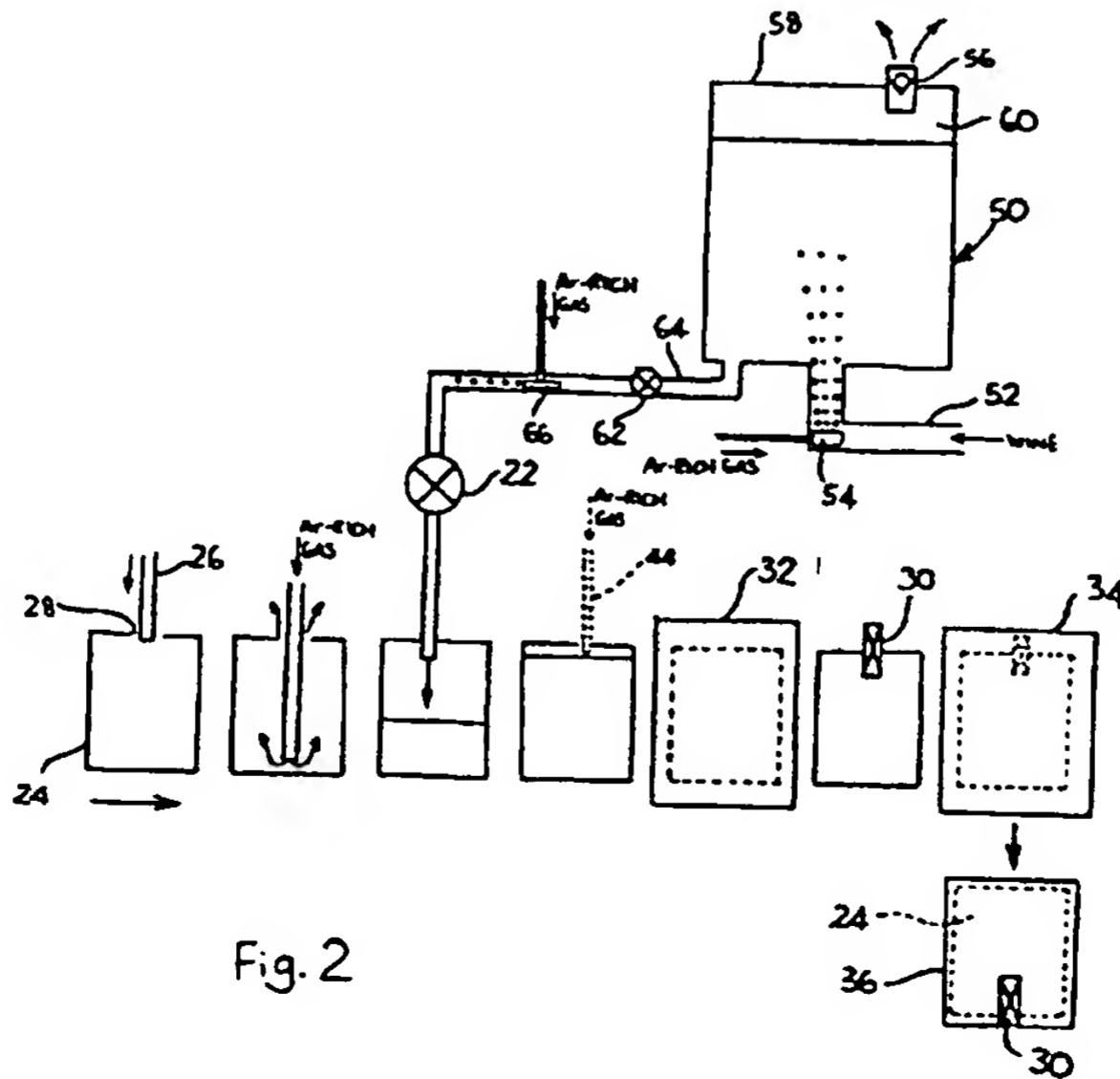


Fig. 2

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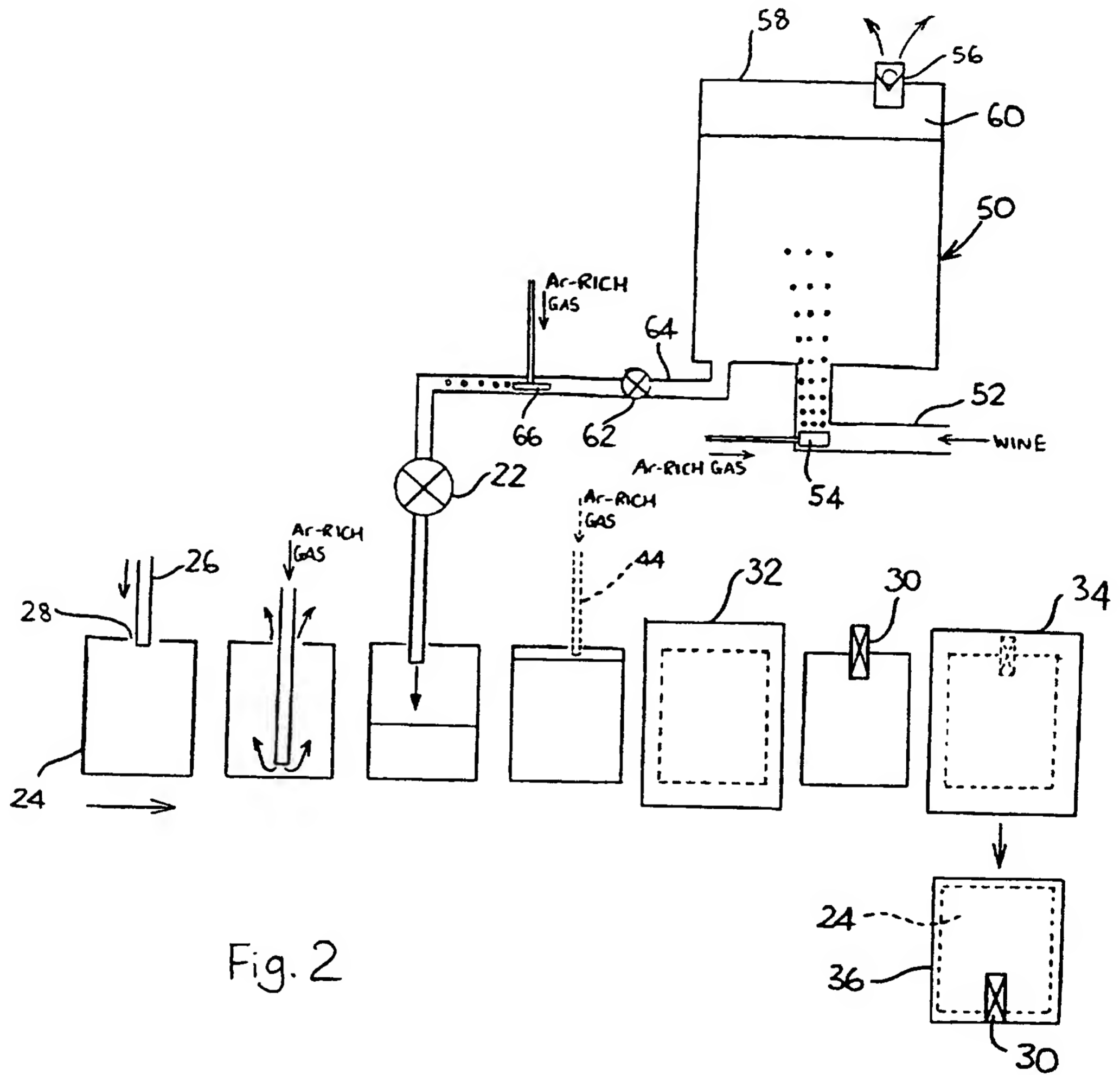


Fig. 2

the wine to be storable in optimum drinking condition for a longer period of time.

In accordance with a first aspect of the present invention, a method of treating wine comprises sparging the wine with an argon-rich gas.

It has been found, surprisingly, that this improves the taste of many wines and prolongs the time for which many wines remain in good drinking condition. Moreover, it is believed that the present invention may also encourage some wines to mature more quickly, making them available for drinking much earlier.

The present invention is particularly (but not exclusively) applicable to wines sold in "wine boxes". In fact, the box is merely an outer robust container which encloses and protects an inner flexible metallised plastic bag having a valve projecting through the box to allow dispensing of the wine from the bag. The quality of such wines has often been criticised and it is thought that one reason for the perceived lack of quality is the fact that the wine is not stored in the conventional manner, in a glass bottle with a cork stopper. It has been found surprisingly, that the present invention markedly improves the taste of wines dispensed from "bag in box" containers.

One of the advantages of the "bag in box" dispensers from a consumer's point of view is that it is possible to dispense the required amount of wine without having to

By way of example only, specific embodiments of the present invention will now be described, with reference to the accompanying drawings, in which:

Fig. 1 is a schematic representation of the preservation of wine in accordance with a first embodiment of the present invention; and

Fig. 2 is a schematic representation of the preservation of the preservation of wine in accordance with a second embodiment of the present invention.

Referring firstly to Fig. 1, in order to package "bag in box" wines, the wine is first of all normally stored in a bulk container 10. In accordance with the present invention, the wine is sparged with an argon-rich gas (preferably 100% argon) by bubbling the gas through the wine via a sparger (e.g. a 2 micron pore size sintered metal sparging element 12), the inlet pipe 11 to which passes sealingly through a lid 14 until the wine is substantially saturated with the sparging gas. It should be noted that the bulk container 10 should be sealed with the lid 14 which is provided with a one-way exhaust valve 16 to allow the egress of air displaced from the wine by the sparging gas and from the headspace 18 above the upper surface of the wine (although good results can be obtained by omitting the valve 16 and allowing egress of air displaced from the wine via an aperture in the lid whose size can be chosen to determined the rate of egress).

bulk container 50 which may, for example, be a static vat or a tanker for transporting the wine. The wine is fed to the container 50 via an input pipe 52 and a sparger 54 (e.g. a 2 micron pore size sintered metal sparging element) is located in the input pipe adjacent to where the pipe enters the bulk container 50. In this way, the wine is treated by the sparging gas as the wine enters the bulk container 50 and it has been found that this uses considerably less sparging gas than known methods. As for the first embodiments the sparging gas is an argon-rich gas (preferably 100% argon).

Preferably, the sparger is only operated as wine is being fed into the bulk container 50 and a sparging rate of, for example, 20 litres of sparging gas per minute causes the wine to be substantially saturated with sparging gas. Optionally, when wine is not being fed into the bulk container 50, the sparger can be arranged to discharge a much lower amount, for example 0.2 litres per minute, to keep the wine substantially saturated with sparging gas.

The bulk container is substantially sealed, but optionally a one-way exhaust valve 56 may be located on an upper cover 58 of the container 50 to allow gases (such as oxygen and carbon dioxide) which have been displaced out of solution and into the headspace 60 above the wine to escape from the container.

The discharge of wine from the bulk container 50 is

present invention have also consistently produced high scores.

The invention is not restricted to the details of the foregoing embodiments. For example , although the invention has been described with reference to "bag in box" containers, it is also applicable to other containers, for example to bottles.

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located in the vicinity of an inlet for wine into the bulk container.

10. A method as claimed in any of the preceding claims, wherein the wine is sparged as it flows out of a bulk container.

11. A method as claimed in claim 10, wherein the sparing gas is introduced via a sparger located in an outlet for wine from the bulk container.

12. A method as claimed in any of claims 1 to 11, wherein the wine is sparged until it is substantially saturated with the argon-rich gas.

13. A process for packaging wine, comprising treating the wine in accordance with a method as claimed in any of claims 1 to 12 and packaging the sparged wine in a substantially gas-impermeable container.

14. A process as claimed in claim 13, wherein the wine is sparged in bulk in a first container prior to being dispensed into a plurality of containers.

15. A process as claimed in claim 14, wherein the sparged wine is stored in bulk in a second container prior to being dispensed into a plurality of containers.

16. A process as claimed in claim 15, wherein a head space above the sparged wine in the second container comprises an argon-rich atmosphere.

17. A process as claimed in any of claims 13 to 16, wherein the sparged wine is dispensed into a plurality of bag-in box containers.

25. A process for packaging wine, comprising dispensing wine into a substantially gas-impermeable container and forming an argon-rich atmosphere in a head space above the wine in the container.

26. A process as claimed in claim 25, comprising introducing an argon-rich gas into the head space above the wine.

27. A process as claimed in claim 26, wherein the argon-rich gas comprises substantially 100% argon.

28. A process as claimed in claim 26, wherein the argon-rich gas further comprises one or more other gases.

29. A process as claimed in claim 28, wherein the one or more gases is/are selected from the group comprising other noble gases, carbon dioxide and nitrogen.

30. A method of treating wine, substantially as herein described, with reference to, and as illustrated in, the accompanying drawing.

31. A process for packaging wine, substantially as herein described, with reference to, and as illustrated in, the accompanying drawing.

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